Drinking Water Surveillance Program

NIAGARA FALLS WATER TREATMENT PLANT

Annual Report 1989

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NIAGARA FALLS
WATER TREATMENT PLANT

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

NIAGARA FALLS WATER TREATMENT PLANT
1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The Niagara Falls Water Treatment Plant is a conventional treatment plant which treats water from the Niagara River via the Welland River. The treatment process consists of screening, coagulation, flocculation, sedimentation, filtration and disinfection. Powdered Activated Carbon is added when necessary to control taste and odour. This plant has a design capacity of 146 x 1000 m^3/day and serves a population of approximately 69,000.

Water samples from the raw and treated water at the treatment plant and three distribution system sites were taken on a monthly basis and analyzed for the presence of approximately 180 parameters. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticide and PCB, Phenolics, Polyaromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analyzed In June and November only.

A summary of results is shown in Table A.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below any applicable health related ODWOs.

Samples were analyzed monthly for the presence of approximately 110 Organics. Levels did not exceed health related guidelines.

During 1989, the DWSP sampling results indicated that the Niagara Falls Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE A

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP

SUMMARY TABLE BY SCAN

	SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE	SITE 2 TESTS	SITE 2 POSITIVE	SITE 2 %POSITIVE	SITE 3 TESTS	SITE 3 POSITIVE	SITE 3 %POSITIVE
	BACTERIOLOGICAL	36	34	94	36	7	19	36	3	8	24	3	12	27	3	11
	CHEMISTRY (FLD)	38	35	92	70	70	100	142	137	96	74	50	67	105	101	96
	CHEMISTRY (LAB)	252	199	78	252	181	71	444	367	82	296	252	85	333	270	81
	METALS	288	169	58	288	146	50	565	335	59	375	228	60	423	225	53
	CHLOROAROMATICS	168	0	0	168	0	0	168	0	0	112	0	0	126	0	0
	CHLOROPHENOLS	12	0	0	6	0	0	.	.	.	.	.	.	.	.	.
	PAH	185	0	0	185	0	0	.	.	.	.	.	.	.	.	.
	PESTICIDES & PCB	408	0	0	408	0	0	343	0	0	233	0	0	267	0	0
	PHENOLICS	12	8	66	12	9	75	.	.	.	.	.	.	.	.	.
	SPECIFIC PESTICIDES	65	0	0	39	0	0	12	0	0	8	0	0	9	0	0
	VOLATILES	348	1	0	290	40	13	348	48	13	203	28	13	261	36	13
TOTAL		1812	446		1754	453		2058	890		1325	561		1551	635	

NO KNOWN HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

NIAGARA FALLS WATER TREATMENT PLANT
1989 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The DWSP was initiated at the Niagara Falls Water Treatment Plant in the spring of 1986. Annual reports were published for 1986 (ISBN 0-7729-2564-x), 1987 and 1988 (ISSN 0839-8925).

This report contains information and results for 1989.

In order to accommodate the increasing number of plants on the DWSP and to facilitate the timely completion of the 1989 annual reports, plants with two or more years of published data will receive an abbreviated annual report. This report maintains the same general format as in previous years but does not include a comprehensive discussion of results. For more detail on the parameters analyzed and discussion of results, consult the 1987 and 1988 reports.

PLANT DESCRIPTION

The Niagara Falls Water Treatment Plant is a conventional treatment plant which treats water from the Niagara River via the Welland River. The process consists of screening, coagulation, flocculation, sedimentation, filtration and disinfection. Powdered Activated Carbon (PAC) is added when necessary to control taste and odour. This plant has a design capacity of 146 x 1000 m^3/day and flows on day of sampling ranging from 42.6 x 1000 m^3/day to 104.9 x 1000 m^3/day. The plant serves a population of approximately 69,000.

The plant location is shown in Figure 1. Plant Process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

SAMPLING AND ANALYSES

Plant operating personnel perform analyses on parameters for process control (Table 1).

Water at the Niagara Falls Water Treatment plant and three distribution system locations was sampled for the presence of approximately 180 parameters monthly in 1989. Specific Pesticides and Chlorophenols were sampled in June and November only.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

NIAGARA FALLS WATER TREATMENT PLANT

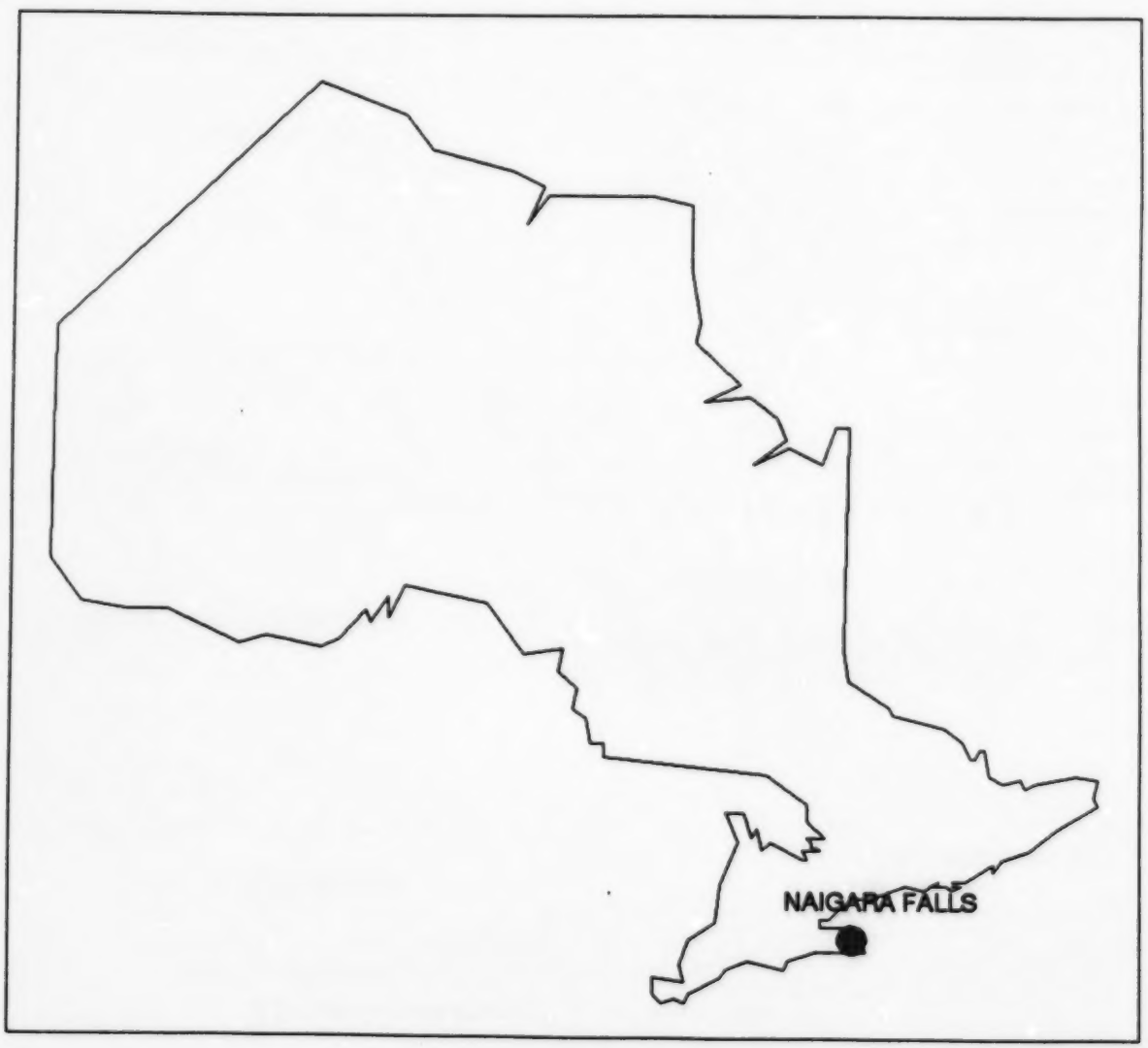

FIGURE 2

NIAGARA FALLS WTP

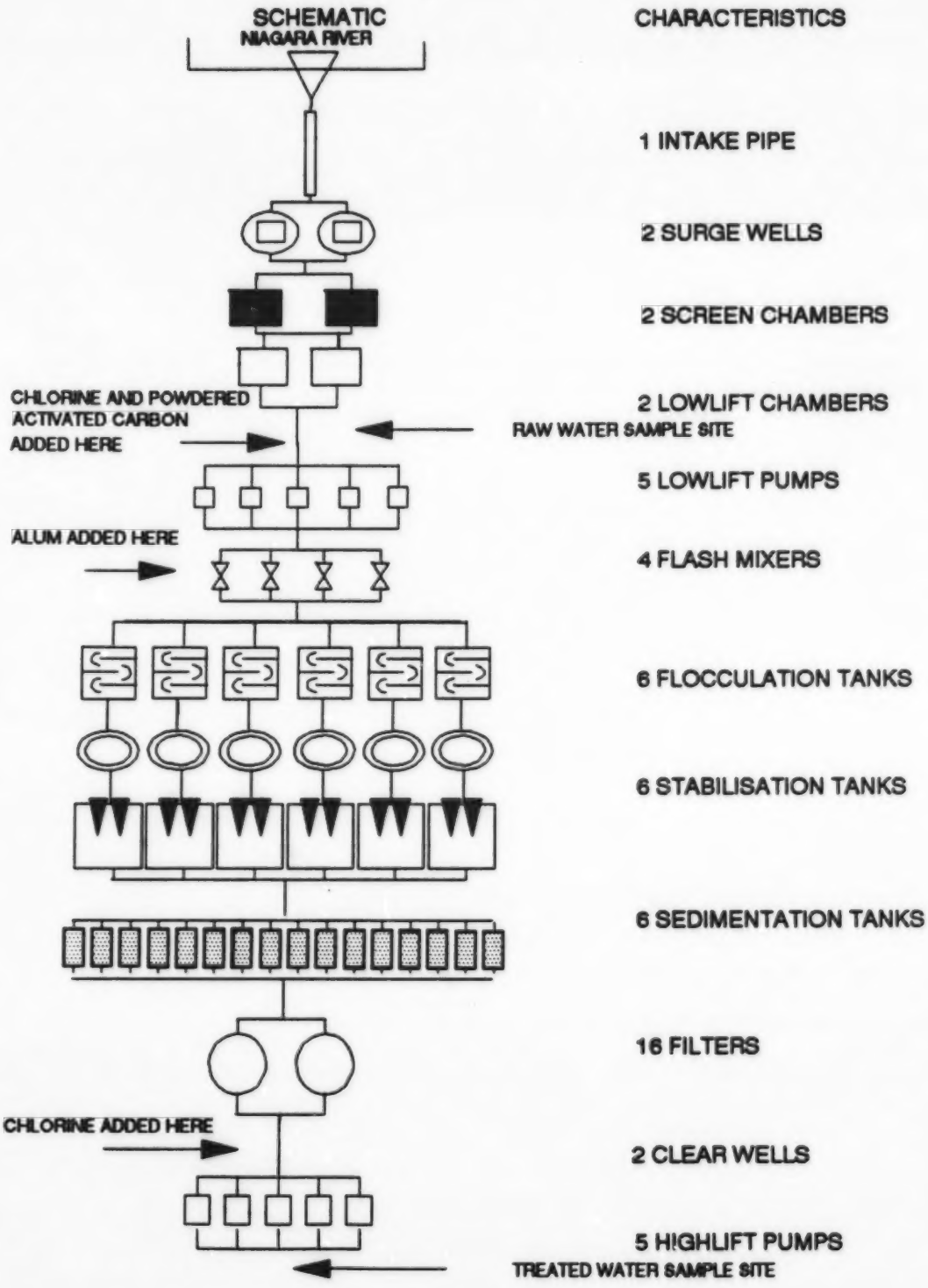

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

IN-PLANT MONITORING NIAGARA FALLS WTP 1989

PARAMETER		LOCATION	FREQUENCY
Chlorine residual-free		Filter influent	every 4 hrs
		Filter effluent	every 4 hrs
		Treated water	every 4 hrs
	combined	Filter influent	every 4 hrs
		Filter effluent	every 4 hrs
		Treated water	every 4 hrs
	total	Filter influent	every 4 hrs
		Filter effluent	every 4 hrs
		Treated Water	every 4 hrs
Taste and odour		Raw Screen well	2 times/week
		Top of filters	2 times/week
		Discharge main	2 times/week
Temperature		Lowlift discharge	daily
Turbidity		Raw screen well	continuous
		Filter influent	every 4 hrs
		Filter effluent	every 4 hrs
		Discharge main	every 4 hrs

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

NIAGARA FALLS WATER SUPPLY SYSTEM

LOCATION:	3599 MACKLEM STREET NIAGARA FALLS, ONTARIO L2G 6C7 (416-295-4831)
SOURCE:	RAW WATER SOURCE - NIAGARA RIVER VIA WELLAND RIVER
RATED CAPACITY:	145.5 (1000 M^3/DAY)
OPERATION:	MUNICIPALITY
PLANT SUPERINTENDENT:	H. HODGSON
MINISTRY REGION:	WEST CENTRAL
DISTRICT OFFICER:	MR. J. MAYES

MUNICIPALITY SERVED	POPULATION
CITY OF NIAGARA FALLS	68,425

Polyaromatic Hydrocarbons and Phenolics are only analyzed in the raw and treated water at the plant. As of August 1989, the analysis of Triazine pesticides was dropped from the distribution sample. Laboratory analysis was conducted at the Ministry of the Environment facilities in Rexdale, Ontario.

RESULTS

Field Chemistry measurements were recorded on the day of sampling and were entered on the DWSP database as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analyzed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analyzed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters. These are currently under review. When an ODWO is not available, guidelines/limits from other agencies are consulted. The Parameter Listing System (PALIS), recently published (ISBN 0-7729-4461-X) by the MOE, catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Many of the compounds detected are naturally occurring or are treatment by-products.

IN THIS REPORT, DISCUSSION IS LIMITED TO THE TREATED AND DISTRIBUTED WATER AND ADDRESSES ONLY THOSE PARAMETERS WITH CONCENTRATIONS ABOVE GUIDELINE VALUES AND ORGANIC PARAMETERS WITH POSITIVE RESULTS.

Results of the treated and distributed water indicate that no health related guidelines were exceeded.

Bacteriology

Standard Plate Count

The ODWO of 500 counts/mL for standard plate count was exceeded in the July, September and October treated water samples indicating some deterioration in the water quality.

Hardness

The ODWOs indicate that a hardness level of between 80 and 100 mg/L as calcium carbonate for domestic waters, provides an acceptable balance between corrosion and encrustation. Water supplies with a hardness greater than 200 mg/L are considered poor and would possess a tendency to form scale deposits and result in excessive soap consumption.

Inorganic and Physical Parameters

Colour

The aesthetic ODWO of 5 True Colour Units (TCU) was exceeded three times in the treated and distributed samples.

Aluminum

The plant operational guideline of 100 µg/L as Al in water leaving the plant was exceeded in five treated water samples.

Organic Parameters

Trihalomethanes

Trihalomethanes (THMs) are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs. All Total THM occurrences, ranging from 19.8 µg/L to 40.8 µg/L, were well below the ODWO of 350 µg/L.

CONCLUSIONS

No health related water quality guidelines were exceeded.

Results listed in this report for 1989 are consistent with results

reported for previous years.

The treated water was of good quality and this was maintained in the distribution system.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP SAMPLE DAY CONDITIONS FOR 1989

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)			
			TASTE & ODOUR	COAGULATION	PRE-CHLORINATION	POST-CHLORINATION
DATE	DELAY* TIME(HRS)	FLOW (1000M3)	ACTIVATED CARBON POWDER	ALUM LIQUID	CHLORINE	CHLORINE
JAN 10	12.0	44.3	.	14.00	.80	.20
FEB 14	7.0	68.0	.	14.00	.80	.20
MAR 14	8.0	42.6	.	10.00	.70	.20
APR 11	7.5	45.0	.	13.00	.70	.20
MAY 09	.0	.0	.	10.00	.70	.20
JUN 13	7.0	70.0	.	12.87	.80	.30
JUL 11	4.8	102.6	1.00	9.00	1.00	.30
AUG 15	4.0	104.9	1.84	10.71	1.30	.30
SEP 12	5.0	92.0	.	9.00	1.30	.30
OCT 11	8.0	79.5	.	9.00	1.10	.20
NOV 21	10.0	52.0	.	14.00	1.00	.20
DEC 12	10.0	.0	.	10.00	.90	.20

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1			SITE 2			SITE 3		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	12	11	0	.	.	.	.	.	.	.	.	.	.	.	.
	STANDRD PLATE CNT MF	.	.	.	12	5	0	12	0	0	8	2	0	9	2	0
	TOTAL COLIFORM MF	12	11	0	12	0	0	12	1	0	8	1	0	9	0	0
	T COLIFORM BCKGRD MF	12	12	0	12	2	0	12	2	0	8	0	0	9	1	0
*TOTAL SCAN BACTERIOLOGICAL		36	34	0	36	7	0	36	3	0	24	3	0	27	3	0
*TOTAL GROUP BACTERIOLOGICAL		36	34	0	36	7	0	36	3	0	24	3	0	27	3	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	1	0	0	12	12	0	24	24	0	9	1	0	18	17	0
	FLD CHLORINE FREE	1	0	0	12	12	0	22	17	0	8	0	0	17	14	0
	FLD CHLORINE (TOTAL)	1	0	0	12	12	0	24	24	0	9	1	0	18	18	0
	FLD PH	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	FLD TEMPERATURE	11	11	0	10	10	0	24	24	0	16	16	0	16	16	0
	FLD TURBIDITY	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
*TOTAL SCAN CHEMISTRY (FLD)		38	35	0	70	70	0	142	137	0	74	50	0	105	101	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	CALCIUM	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	CYANIDE	12	1	0	12	0	0	12	0	0	8	0	0	9	0	0
	CHLORIDE	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	COLOUR	12	2	10	12	1	10	24	2	21	16	5	11	18	0	16
	CONDUCTIVITY	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
CHEMISTRY (LAB)	FLUORIDE	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	HARDNESS	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	IONCAL	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	LANGELIERS INDEX	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	MAGNESIUM	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	SODIUM	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	AMMONIUM TOTAL	12	3	5	12	0	5	24	9	5	16	8	4	18	5	8
	NITRITE	12	3	8	12	0	6	24	1	14	16	1	13	18	0	12
	TOTAL NITRATES	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	NITROGEN TOT KJELD	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	PH	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	PHOSPHORUS FIL REACT	12	3	5	12	0	2	.	.	.	.	.	.	.	.	.
	PHOSPHORUS TOTAL	12	7	5	12	2	6	.	.	.	.	.	.	.	.	.
	SULPHATE	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	TURBIDITY	12	12	0	12	10	2	24	19	5	16	14	2	18	13	5
*TOTAL SCAN CHEMISTRY (LAB)		252	199	33	252	181	31	444	367	45	296	252	30	333	270	41
METALS	SILVER	12	0	2	12	0	3	24	0	11	16	0	10	18	0	7
	ALUMINUM	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	ARSENIC	12	7	5	12	1	10	24	3	20	16	3	11	18	3	14
	BARIUM	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	BORON	12	11	1	12	11	1	24	24	0	16	16	0	18	18	0
	BERYLLIUM	12	0	9	12	0	8	24	0	19	16	0	16	18	0	12

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
METALS	CADMIUM	12	0	3	12	0	1	24	2	12	16	0	10	18	0	7
	COBALT	12	5	7	12	5	7	24	1	22	16	1	15	18	0	18
	CHROMIUM	12	9	1	12	9	2	24	22	2	16	16	0	18	11	7
	COPPER	12	11	1	12	9	3	24	23	1	16	16	0	18	17	1
	IRON	12	7	5	12	0	2	24	0	6	16	7	9	18	0	8
	MERCURY	12	4	8	12	3	9	13	1	3	7	6	1	9	0	2
	MANGANESE	12	12	0	12	11	1	24	22	2	16	16	0	18	13	5
	MOLYBDENUM	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	NICKEL	12	0	12	12	0	11	24	12	11	16	7	8	18	6	12
	LEAD	12	9	3	12	1	8	24	23	1	16	14	2	18	10	7
	ANTIMONY	12	11	1	12	11	1	24	24	0	16	16	0	18	18	0
	SELENIUM	12	0	5	12	0	10	24	0	21	16	0	15	18	0	16
	STRONTIUM	12	12	0	12	12	0	24	24	0	16	16	0	18	18	0
	TITANIUM	12	12	0	12	9	3	24	20	4	16	14	2	18	14	4
	THALLIUM	12	0	8	12	0	7	24	0	15	16	0	8	18	0	5
	URANIUM	12	11	1	12	9	3	24	19	5	16	12	4	18	14	4
	VANADIUM	12	2	10	12	10	2	24	20	4	16	4	12	18	12	6
	ZINC	12	10	2	12	9	3	24	23	1	16	16	0	18	17	1
*TOTAL SCAN METALS		288	169	84	288	146	95	565	335	160	375	228	123	423	225	136
*TOTAL GROUP INORGANIC & PHYSICAL		578	403	117	610	397	126	1151	839	205	745	530	153	861	596	177
CHLOROAROMATICS	HEXACHLOROBUTADIENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	123 TRICHLOROBENZENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
CHLOROAROMATICS	1234 T-CHLOROBENZENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	1235 T-CHLOROBENZENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	124 TRICHLOROBENZENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	1245 T-CHLOROBENZENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	135 TRICHLOROBENZENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	HCB	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	HEXACHLOROETHANE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	OCTACHLOROSTYRENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	PENTACHLOROBENZENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	236 TRICHLOROTOLUENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	245 TRICHLOROTOLUENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	26A TRICHLOROTOLUENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
*TOTAL SCAN CHLOROAROMATICS		168	0	0	168	0	0	168	0	0	112	0	0	126	0	0
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	245-TRICHLOROPHENOL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	246-TRICHLOROPHENOL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	PENTACHLOROPHENOL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		12	0	0	6	0	0	0	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE	RAW		TREATED			SITE 1			SITE 2			SITE 3		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	11	0	0	11	0	0	.	.	.	.	.	.	.	.	.
	ANTHRACENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	FLUORANTHENE	11	0	0	11	0	0	.	.	.	.	.	.	.	.	.
	PYRENE	11	0	0	11	0	0	.	.	.	.	.	.	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	DIMETH. BENZ(A)ANTHR	6	0	0	6	0	0	.	.	.	.	.	.	.	.	.
	BENZO(E) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	PERYLENE	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	BENZO(A) PYRENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	11	0	0	11	0	0	.	.	.	.	.	.	.	.	.
	BENZO(B) CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
	CORONENE	12	0	0	12	0	0	.	.	.	.	.	.	.	.	.
*TOTAL SCAN PAH		185	0	0	185	0	0	0	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	ALPHA BHC	12	0	4	12	0	8	12	0	9	8	0	2	9	0	4
	BETA BHC	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	LINDANE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
PESTICIDES & PCB	ALPHA CHLORDANE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	GAMMA CHLORDANE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	DIELDRIN	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	METHOXYCHLOR	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	ENDOSULFAN 1	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	ENDOSULFAN II	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	ENDRIN	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	ENDOSULFAN SULPHATE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	HEPTACHLOR EPOXIDE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	HEPTACHLOR	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	MIREX	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	OXYCHLORDANE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	OPDDT	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	PCB	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	DDD	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	PPDDE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	PPDDT	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	AMETRINE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	ATRAZINE	12	0	1	12	0	1	7	0	0	5	0	0	6	0	0
	ATRATONE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	CYANAZINE (BLADEX)	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	D-ETHYL ATRAZINE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	D-ETHYL SIMAZINE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	PROMETONE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	PROPAZINE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
PESTICIDES & PCB	PROMETRYNE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	METRIBUZIN (SENCOR)	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	SIMAZINE	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	ALACHLOR (LASSO)	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
	METOLACHLOR	12	0	0	12	0	0	7	0	0	5	0	0	6	0	0
*TOTAL SCAN PESTICIDES & PCB		408	0	5	408	0	9	343	0	9	233	0	2	267	0	4
PHENOLICS	PHENOLICS	12	8	3	12	9	3	.	.	.	.	.	.	.	.	.
*TOTAL SCAN PHENOLICS		12	8	3	12	9	3	0	0	0	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	12	0	0	12	0	0	12	0	0	8	0	0	9	0	0
	2,4,5-T	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	2,4-D	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	2,4-DB	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	DICAMBA	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	SILVEX	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	DIAZINON	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	DICHLOROVOS	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	CHLORPYRIFOS	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
SPECIFIC PESTICIDES	ETHION	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	MALATHION	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	MEVINPHOS	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	METHYL PARATHION	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	METHYLTRITHION	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	PARATHION	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	PHORATE	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	RELDAN	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	RONNEL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	BENOMYL	1	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	BUX	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	CARBOFURAN	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	CICP	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	DIALLATE	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	EPTAM	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	IPC	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	PROPOXUR	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	CARBARYL	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
	BUTYLATE	2	0	0	1	0	0	.	.	.	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		65	0	0	39	0	0	12	0	0	8	0	0	9	0	0
VOLATILES	BENZENE	12	0	1	10	0	1	12	0	1	7	0	0	9	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS

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SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
VOLATILES	TOLUENE	12	0	4	10	0	3	12	0	5	7	0	3	9	0	2
	ETHYLBENZENE	12	0	4	10	0	0	12	0	3	7	0	4	9	0	3
	P-XYLENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	M-XYLENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	O-XYLENE	12	0	0	10	0	0	12	0	2	7	0	1	9	0	0
	STYRENE	12	1	8	10	0	8	12	0	9	7	0	5	9	0	7
	1,1 DICHLOROETHYLENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	METHYLENE CHLORIDE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	T1,2DICHLOROETHYLENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	1,1 DICHLOROETHANE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	CHLOROFORM	12	0	3	10	10	0	12	12	0	7	7	0	9	9	0
	111, TRICHLOROETHANE	12	0	2	10	0	1	12	0	0	7	0	0	9	0	1
	1,2 DICHLOROETHANE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	CARBON TETRACHLORIDE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	1,2 DICHLOROPROPANE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	TRICHLOROETHYLENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	DICHLOROBROMOMETHANE	12	0	1	10	10	0	12	12	0	7	7	0	9	9	0
	112 TRICHLOROETHANE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	CHLORODIBROMOMETHANE	12	0	0	10	10	0	12	12	0	7	7	0	9	9	0
	T-CHLOROETHYLENE	12	0	0	10	0	1	12	0	1	7	0	0	9	0	0
	BROMOFORM	12	0	0	10	0	10	12	0	12	7	0	7	9	0	9
	1122 T-CHLOROETHANE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	CHLOROBENZENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	1,4 DICHLOROBENZENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	1,3 DICHLOROBENZENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0

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VOLATILES	1,2 DICHLOROBENZENE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	ETHLYENE DIBROMIDE	12	0	0	10	0	0	12	0	0	7	0	0	9	0	0
	TOTL TRIHALOMETHANES	12	0	1	10	10	0	12	12	0	7	7	0	9	9	0
*TOTAL SCAN VOLATILES		348	1	24	290	40	24	348	48	33	203	28	20	261	36	22
*TOTAL GROUP ORGANIC		1198	9	32	1108	49	36	871	48	42	556	28	22	663	36	26
TOTAL		1812	446	149	1754	453	162	2058	890	247	1325	561	175	1551	635	203

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!IV	No Data: Inverted Septum
!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded

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The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. Studies of long-term environmental trends and modelling may however, be adversely affected by the exclusion of such data.
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For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported with the code "<T". Results qualified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. The average of such data however, is still only an estimate of the amount of substance present subject to the possible biases of the method used.

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!LD	No Data: Test Queued After Sample Discarded

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

		WATER TREATMENT PLANT			DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL								
FECAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 0 (A1)			
JAN	80 T48	.	.	.	.	.	.	.
FEB	24 T48	.	.	.	.	.	.	.
MAR	4 R72	.	.	.	.	.	.	.
APR	42 T48	.	.	.	.	.	.	.
MAY	130	.	.	.	.	.	.	.
JUN	14	.	.	.	.	.	.	.
JUL	2	.	.	.	.	.	.	.
AUG	154	.	.	.	.	.	.	.
SEP	2	.	.	.	.	.	.	.
OCT	24	.	.	.	.	.	.	.
NOV	30	.	.	.	.	.	.	.
DEC	BDL	.	.	.	.	.	.	.
STANDRD PLATE CNT MF ( )			DET'N LIMIT = 0		GUIDELINE = 500/ML (A1)			
JAN	.	0 <=>	.	0 <=>	.	.	.	1 <=>
FEB	.	1 <=>	.	3 <=>	.	1 <=>	.	39 T24
MAR	.	1 <=>	.	4 <=>	.	1 <=>	.	0 <=>
APR	.	0 <=>	.	0 <=>	.	0 <=>	.	2 <=>
MAY	.	1 <=>	.	0 <=>	.	0 <=>	.	18
JUN	.	0 <=>	.	1 <=>	.	1 <=>	.	.
JUL	.	2400 >	.	2 <=>	.	.	.	1 <=>
AUG	.	45	.	2 <=>	.	.	.	.
SEP	.	520	.	9 <=>	.	10	.	.
OCT	.	10000	.	3 <=>	.	29	.	3 <=>
NOV	.	BDL	.	0 <=>	.	1 <=>	.	0 <=>

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT SITE 1 STANDING	WATER TREATMENT PLANT SITE 1 FREE FLOW	WATER TREATMENT PLANT SITE 2 STANDING	WATER TREATMENT PLANT SITE 2 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW
DEC	.	19	.	0 <=>	.	.	.	0 <=>
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)			
JAN	2100 A3C	0 T48	.	1 T24	.	.	.	0 T24
FEB	8500 A3C	0 T48	.	0 T24	.	0 T24	.	0 T24
MAR	640 A3C	0 T48	.	0 T24	.	0 T24	.	0 T24
APR	700 T48	0 T48	.	0 T24	.	0 T48	.	0 T24
MAY	3200 A3C	0	.	0	.	0	.	0
JUN	340 A3C	0	.	0	.	0	.	.
JUL	1700 A3C	0	.	0 A3C	.	.	.	0
AUG	440 A3C	0	.	0	.	.	.	.
SEP	300 <=>	0	.	0	.	1	.	.
OCT	460 A3C	0 A3C	.	0	.	0	.	0
NOV	360 A3C	0	.	0	.	0	.	0
DEC	100 A3C	0	.	0	.	.	.	0
T COLIFORM BCKGRD MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = N/A			
JAN	40000 >	4 T48	.	2 T24	.	.	.	0 T24
FEB	54000 A3C	0 T48	.	0 T24	.	0 T24	.	1 T24
MAR	10200 A3C	0 T48	.	0 T24	.	0 T24	.	0 T24
APR	2400 T48	0 T48	.	0 T24	.	0 T48	.	0 T24
MAY	68000 A3C	0	.	0	.	0	.	0
JUN	48000 >	0	.	0	.	0	.	.
JUL	40000 >	0	.	310 A3C	.	.	.	0
AUG	14400 A3C	0	.	0	.	.	.	.
SEP	23000	0	.	0	.	0	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

	SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
		RAW	TREATED	SITE 1		SITE 2		SITE 3	
				STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT		24000 A3C	2400 >	.	0	.	0	.	0
NOV		9000 A3C	0	.	0	.	0	.	0
DEC		3800 A3C	0	.	0	.	.	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT SITE 1 STANDING	WATER TREATMENT PLANT SITE 1 FREE FLOW	WATER TREATMENT PLANT SITE 2 STANDING	WATER TREATMENT PLANT SITE 2 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW
CHEMISTRY (FLD)								
FLD CHLORINE (COMB) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	.	.120	.150	.150	.	.	.100	.050
FEB	.	.150	.100	.100	.	.	.150	.100
MAR	.	.110	.200	.100	.	.	.050	.100
APR	.	.100	.100	.100	.	.	.250	.050
MAY	.000	.140	.150	.100	.	.050	.150	.050
JUN	.	.100	.050	.100	.000	.000	.	.
JUL	.	.120	.150	.100	.	.	.100	.150
AUG	.	.120	.200	.100	.	.	.	.
SEP	.	.400	.200	.100	.000	.000	.	.
OCT	.	.150	.200	.100	.000	.000	.150	.150
NOV	.	.130	.250	.100	.000	.000	.250	.050
DEC	.	.150	.250	.100	.	.	.050	.000
FLD CHLORINE FREE ( )			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	.	.390	.050	.150	.	.	.100	.300
FEB	.	.350	.100	.250	.	.	.050	.100
MAR	.	.390	.	.200	.	.	.250	.250
APR	.	.340	.	.200	.	.	.	.250
MAY	.000	.360	.050	.200	.	.	.050	.250
JUN	.	.350	.100	.200	.000	.000	.	.
JUL	.	.360	.050	.200	.	.	.000	.100
AUG	.	.360	.000	.150	.	.	.	.
SEP	.	.100	.000	.100	.000	.000	.	.
OCT	.	.300	.000	.200	.000	.000	.000	.050
NOV	.	.320	.000	.250	.000	.000	.000	.250

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	.	.400	.000	.250	.	.	.250	.300
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	.	.510	.200	.300	.	.	.200	.350
FEB	.	.500	.200	.350	.	.	.200	.200
MAR	.	.500	.200	.300	.	.	.300	.350
APR	.	.440	.100	.300	.	.	.250	.300
MAY	.000	.500	.200	.300	.	.050	.200	.300
JUN	.	.450	.100	.300	.000	.000	.	.
JUL	.	.480	.200	.300	.	.	.100	.250
AUG	.	.480	.200	.250	.	.	.	.
SEP	.	.500	.200	.200	.000	.000	.	.
OCT	.	.450	.200	.300	.000	.000	.150	.200
NOV	.	.550	.250	.350	.000	.000	.250	.300
DEC	.	.550	.250	.350	.	.	.300	.300
FLD PH (DIMSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)			
JAN	7.900	7.500	7.500	7.500	.	.	7.500	7.500
FEB	7.800	7.500	7.500	7.300	7.500	7.400	7.500	7.500
MAR	8.100	7.100	7.500	7.500	7.500	7.600	6.900	7.200
APR	7.500	7.500	7.500	7.500	7.400	7.300	7.500	7.500
MAY	7.900	7.500	7.500	7.400	7.500	7.500	7.500	7.400
JUN	8.000	7.500	7.500	7.500	7.500	7.500	.	.
JUL	8.000	7.700	7.600	7.600	.	.	7.500	7.600
AUG	8.200	7.600	7.600	7.400	.	.	.	.
SEP	8.000	7.600	7.600	7.500	7.500	7.500	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW
OCT	7.800	7.500	7.600	7.500	7.500	7.500	7.400	7.500
NOV	8.000	7.600	7.500	7.500	7.500	7.500	7.500	7.400
DEC	7.900	7.400	7.500	7.500	.	.	7.600	7.400
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)			
JAN	1.000	1.000	15.000	4.000	.	.	14.000	2.000
FEB	.	.	15.000	5.000	10.000	4.000	.	.
MAR	1.000	1.000	16.000	3.000	11.000	4.000	10.000	1.000
APR	2.000	2.000	18.000	5.000	12.000	6.000	10.000	3.000
MAY	6.500	6.500	16.000	8.000	12.000	9.000	12.000	6.000
JUN	17.000	18.000	20.000	15.000	19.000	16.000	.	.
JUL	24.000	.	19.000	20.500	.	.	19.000	19.000
AUG	23.000	23.000	20.000	21.000	.	.	.	.
SEP	21.000	22.000	21.000	20.000	19.000	21.000	.	.
OCT	14.900	13.000	21.000	15.500	17.500	16.000	18.000	14.500
NOV	6.000	6.000	19.000	10.000	16.000	10.500	18.000	9.000
DEC	2.200	3.900	18.000	8.500	.	.	17.000	5.000
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)			
JAN	49.900	.360	.240	.190	.	.	.310	.320
FEB	9.200	.100	.060	.080	.780	.410	.600	.300
MAR	.220	.100	.550	.150	.430	.400	.450	.340
APR	17.100	.070	.120	.250	3.000	.450	.330	.330
MAY	14.000	.330	.300	.300	1.100	1.800	.690	.390
JUN	6.700	.200	.200	.130	.330	.230	.	.
JUL	1.500	.100	.650	.250	.	.	.500	.600

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	3.950	.490	.500	.240	.	.	.	.
SEP	2.350	.170	.260	.280	.430	.390	.	.
OCT	5.950	.250	.220	.280	.430	.370	.700	.600
NOV	22.000	.550	.500	.280	.610	.460	.230	.230
DEC	17.000	.240	.440	.500	.	.	.290	.220

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE			WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)								
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)			
JAN	106.000	97.600	98.000	97.900	.	.	99.500	98.500
FEB	106.500	98.200	98.100	97.600	98.600	98.900	99.900	99.600
MAR	102.000	96.500	96.400	96.500	96.500	96.500	97.500	97.400
APR	100.300	93.300	92.300	92.500	92.800	92.900	94.400	94.300
MAY	100.000	94.400	93.900	94.700	94.400	94.500	96.700	96.000
JUN	94.800	87.900	88.400	88.100	90.500	88.400	.	.
JUL	100.700	93.700	93.200	93.600	.	.	94.500	94.600
AUG	100.000	93.000	93.200	92.400	.	.	.	.
SEP	99.100	92.900	93.200	93.400	93.100	93.500	.	.
OCT	101.500	93.800	94.200	94.400	94.400	94.500	95.400	95.300
NOV	95.600	95.800	96.400	96.300	96.400	95.900	96.700	96.900
DEC	102.700	95.000	95.700	95.100	.	.	96.300	96.100
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)			
JAN	37.000	38.800	37.600	37.800	.	.	38.400	38.600
FEB	37.000	38.000	39.000	38.600	38.800	38.600	39.200	39.000
MAR	37.800	37.800	37.800	37.800	37.200	39.200	38.200	38.600
APR	35.800	35.000	35.600	35.800	36.800	36.200	35.800	35.800
MAY	37.400	37.600	37.200	38.000	37.400	37.400	37.800	38.000
JUN	35.800	35.600	37.000	35.200	35.600	35.800	.	.
JUL	37.400	36.400	37.800	37.200	.	.	38.000	37.800
AUG	37.400	37.400	37.600	38.000	.	.	.	.
SEP	34.800	35.000	34.400	34.800	34.400	35.600	.	.
OCT	40.600	38.600	39.700	39.200	39.600	40.000	39.600	40.800
NOV	38.000	38.200	38.800	38.600	37.800	38.000	38.600	38.600

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE		WATER TREATMENT PLANT				DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2		SITE 3		
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW	
DEC	39.000	39.200	39.800	39.400	.	.	40.400	40.200	
CYANIDE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = .200 (A1)				
JAN	BDL	BDL	.	BDL	.	.	.	BDL	
FEB	BDL	BDL	.	BDL	.	BDL	.	BDL	
MAR	BDL	BDL	.	BDL	.	BDL	.	BDL	
APR	BDL	BDL	.	BDL	.	BDL	.	BDL	
MAY	BDL	BDL	.	BDL	.	BDL	.	BDL	
JUN	BDL	BDL	.	BDL	.	BDL	.	.	
JUL	BDL	BDL	.	BDL	.	.	.	BDL	
AUG	BDL	BDL	.	BDL	.	.	.	.	
SEP	BDL	BDL	.	BDL	.	BDL	.	.	
OCT	BDL	BDL	.	BDL	.	BDL	.	BDL	
NOV	.007	BDL	.	BDL	.	BDL	.	BDL	
DEC	BDL	BDL	.	BDL	.	.	.	BDL	
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)				
JAN	15.100	15.900	16.000	15.900	.	.	16.000	15.900	
FEB	15.400	16.200	16.000	16.000	16.300	16.200	16.200	16.200	
MAR	14.400	15.200	15.300	15.200	15.300	15.100	15.300	15.300	
APR	14.600	15.200	15.200	15.100	15.300	15.300	15.200	15.300	
MAY	14.700	15.700	15.500	15.800	15.700	15.600	15.900	15.700	
JUN	15.400	16.700	16.800	17.000	16.700	17.300	.	.	
JUL	14.900	16.000	16.000	16.400	.	.	16.300	16.200	
AUG	14.400	15.700	15.600	15.600	.	.	.	.	
SEP	14.500	15.900	15.800	15.600	15.800	15.800	.	.	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	14.600	15.700	15.700	15.800	15.700	15.600	15.800	15.600
NOV	14.800	15.700	15.800	15.700	15.700	15.600	15.800	15.600
DEC	14.700	15.500	15.600	15.500	.	.	15.600	15.400
COLOUR (HZU)			DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)			
JAN	2.000 <T	.500 <T	.500 <T	.500 <T	.	.	.500 <T	BDL
FEB	1.000 <T	BDL	BDL	.500 <T	2.000 <T	1.000 <T	.500 <T	BDL
MAR	2.000 <T	1.000 <T	.500 <T	1.000 <T	2.000 <T	1.500 <T	1.000 <T	1.000 <T
APR	2.000 <T	.500 <T	.500 <T	.500 <T	3.000	1.000 <T	.500 <T	.500 <T
MAY	2.500	1.000 <T	1.000 <T	1.500 <T	2.500	2.000 <T	1.500 <T	1.000 <T
JUN	9.000	9.500	9.000	9.000	8.500	21.500	.	.
JUL	2.000 <T	1.000 <T	1.000 <T	1.000 <T	.	.	1.000 <T	1.000 <T
AUG	2.000 <T	1.000 <T	1.000 <T	1.000 <T	.	.	.	.
SEP	1.500 <T	.500 <T	.500 <T	.500 <T	1.500 <T	1.000 <T	.	.
OCT	2.000 <T	.500 <T	1.000 <T	.500 <T	1.500 <T	1.500 <T	1.000 <T	.500 <T
NOV	2.000 <T	.500 <T	1.000 <T	.500 <T	2.500	2.000 <T	.500 <T	1.000 <T
DEC	1.000 <T	.500 <T	1.000 <T	.500 <T	.	.	.500 <T	.500 <T
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1		GUIDELINE = 400 (F2)			
JAN	295	302	303	301	.	.	303	302
FEB	301	305	307	307	317	306	308	308
MAR	293	297	301	297	304	297	300	299
APR	295	298	298	299	304	297	299	299
MAY	292	293	294	295	295	294	296	296
JUN	286	289	292	290	290	290	.	.
JUL	290	294	300	295	.	.	296	296

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	285	288	295	289	.	.	.	.
SEP	286	289	290	289	296	290	.	.
OCT	290	293	295	293	294	294	297	296
NOV	299	300	304	301	302	300	301	301
DEC	290	294	299	295	.	.	297	297
FLUORIDE (MG/L)			DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)			
JAN	.120	.100	.100	.100	.	.	.080	.100
FEB	.120	.100	.100	.100	.100	.120	.120	.100
MAR	.080	.080	.120	.180	.080	.100	.140	.120
APR	.120	.120	.120	.100	.100	.100	.120	.100
MAY	.120	.080	.080	.080	.080	.100	.100	.080
JUN	.120	.100	.100	.100	.100	.100	.	.
JUL	.100	.100	.100	.100	.	.	.100	.100
AUG	.120	.120	.100	.100	.	.	.	.
SEP	.120	.100	.100	.100	.100	.100	.	.
OCT	.120	.100	.100	.100	.100	.100	.100	.100
NOV	.120	.100	.100	.100	.080	.080	.100	.080
DEC	.100	.080	.100	.100	.	.	.100	.100
HARDNESS (MG/L)			DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)			
JAN	128.000	133.000	130.000	131.000	.	.	132.000	133.000
FEB	128.000	130.000	133.000	132.000	133.000	132.000	134.000	134.000
MAR	129.000	129.000	131.000	131.000	127.000	131.000	130.000	130.000
APR	124.000	121.000	123.000	123.000	127.000	126.000	123.000	124.000
MAY	129.000	129.000	128.000	130.000	129.000	129.000	130.000	131.000

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE		WATER TREATMENT PLANT				DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	125.000	125.000	129.000	122.000	125.000	125.000	.	.
JUL	128.000	125.000	128.000	127.000	.	.	129.000	128.000
AUG	128.000	128.000	128.000	129.000	.	.	.	.
SEP	121.000	122.000	121.000	122.000	121.000	124.000	.	.
OCT	137.600	132.200	135.400	133.700	134.700	135.200	134.600	136.900
NOV	132.000	132.000	132.000	133.000	131.000	132.000	132.000	132.000
DEC	136.000	135.000	137.000	136.000	.	.	139.000	138.000
IONCAL (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	5.416	2.643	4.661	4.519	.	.	4.516	3.239
FEB	3.921	2.385	1.059	2.232	1.374	1.215	.104	.744
MAR	.989	1.568	.314	.063	2.751	.460	.973	.969
APR	.498	2.875	1.260	1.150	.467	.352	1.624	1.337
MAY	1.924	.989	.008	.977	.482	.176	.320	1.140
JUN	2.845	1.776	4.078	1.082	.025	1.032	.	.
JUL	.945	1.406	.127	141.200	.	.	137.800	139.200
AUG	1.480	1.073	.118	2.031	.	.	.	.
SEP	3.316	2.991	3.923	2.609	4.325	2.459	.	.
OCT	6.305	2.821	4.158	3.288	4.277	4.577	2.511	5.036
NOV	4.625	3.148	2.908	1.938	.508	4.300	.210	3.074
DEC	2.930	2.999	2.821	3.067	.	.	4.573	3.636
LANGELIERS INDEX (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	.346	.058	.096	.089	.	.	.152	.140
FEB	.386	.151	.171	.144	.260	.190	.251	.197
MAR	.340	.194	.112	.044	.184	.150	.192	.206

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT						DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
APR	.448	.356	.348	.351	.273	.279	.370	.360
MAY	.357	.324	.306	.319	.291	.322	.335	.325
JUN	.257	.161	.179	.176	.153	.245	.	.
JUL	.351	.026	.048	.035	.	.	.038	.086
AUG	.410	.357	.328	.351	.	.	.	.
SEP	.474	.377	.341	.337	.338	.387	.	.
OCT	.470	.282	.286	.282	.316	.261	.319	.342
NOV	.232	.254	.222	.231	.322	.263	.343	.383
DEC	.417	.344	.182	.277	.	.	.222	.229
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)			
JAN	8.700	8.800	8.800	8.800	.	.	8.800	8.900
FEB	8.600	8.700	8.600	8.700	8.800	8.700	8.800	8.800
MAR	8.400	8.400	8.800	8.800	8.400	8.200	8.400	8.200
APR	8.400	8.100	8.200	8.200	8.600	8.600	8.200	8.300
MAY	8.700	8.600	8.600	8.600	8.600	8.600	8.500	8.700
JUN	8.700	8.700	8.800	8.200	8.800	8.600	.	.
JUL	8.400	8.200	8.100	8.300	.	.	8.300	8.100
AUG	8.500	8.500	8.400	8.400	.	.	.	.
SEP	8.400	8.500	8.400	8.500	8.500	8.500	.	.
OCT	8.800	8.700	8.800	8.700	8.750	8.600	8.650	8.550
NOV	9.000	8.800	8.700	8.800	8.800	8.900	8.700	8.700
DEC	9.000	9.100	9.100	9.200	.	.	9.200	9.100
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)			
JAN	8.400	8.200	8.400	8.200	.	.	8.200	8.400

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE			WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	8.600	8.400	8.600	8.400	8.600	8.600	8.800	8.600
MAR	8.000	8.000	8.200	8.200	8.200	8.000	8.200	8.200
APR	8.600	8.600	8.600	8.400	9.000	8.800	8.400	8.600
MAY	8.600	8.400	8.200	8.400	8.600	8.200	8.600	8.400
JUN	9.200	9.000	9.200	9.000	9.000	9.200	.	.
JUL	9.200	9.200	9.200	9.400	.	.	9.400	9.400
AUG	8.600	8.800	8.800	8.800	.	.	.	.
SEP	8.400	8.600	9.000	9.000	9.000	8.400	.	.
OCT	8.800	8.800	8.700	8.700	8.800	8.800	8.700	8.800
NOV	8.800	8.400	8.600	8.800	8.400	8.400	8.600	8.400
DEC	8.200	8.400	8.600	8.400	.	.	8.200	8.200
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)			
JAN	.008 <T	.006 <T	.010	.006 <T	.	.	.008 <T	.006 <T
FEB	BDL	BDL	BDL	BDL	.936	.004 <T	.032	BDL
MAR	BDL	.002 <T	.286	.002 <T	.452	.002 <T	.036	.002 <T
APR	.004 <T	.002 <T	BDL	.002 <T	.528	BDL	.010	.002 <T
MAY	.032	BDL	BDL	BDL	.062	BDL	.026	.002 <T
JUN	.020	BDL	.108	BDL	BDL	.002	.	.
JUL	.008 <T	BDL	.060	BDL	.	.	.004 <T	.002 <T
AUG	.008 <T	.002 <T	.144	BDL	.	.	.	.
SEP	.004 <T	.002 <T	.048	.004 <T	.588	.004 <T	.	.
OCT	.012	BDL	.042	.002 <T	.048	.002 <T	.008 <T	BDL
NOV	BDL	BDL	.186	BDL	.306	BDL	BDL	BDL
DEC	BDL	BDL	.088	BDL	.	.	.044	BDL
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)			

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE		WATER TREATMENT PLANT			DISTRIBUTION SYSTEM			
TYPE	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	.003 <T	BDL	.001 <T	BDL	.	.	.001 <T	BDL
FEB	.003 <T	BDL	BDL	BDL	.001 <T	.001 <T	.001 <T	BDL
MAR	.002 <T	BDL	.002 <T	.001	.001 <T	BDL	.001 <T	BDL
APR	.002 <T	BDL	BDL	BDL	.003 <T	.002 <T	.001 <T	BDL
MAY	.008	.001 <T	.001 <T	.001 <T	.001 <T	.001 <T	.001 <T	.002 <T
JUN	.007	.002 <T	.003 <T	.002 <T	.003 <T	.001	.	.
JUL	.006	.001 <T	.001 <T	BDL	.	.	.001 <T	BDL
AUG	.004 <T	.002 <T	.003 <T	.002 <T	.	.	.	.
SEP	.004 <T	.002 <T	.002 <T	.002 <T	.002 <T	.002 <T	.	.
OCT	.002 <T	BDL	.002 <T	.001 <T	.002 <T	.001 <T	.002 <T	.001 <T
NOV	BDL	BDL	BDL	BDL	.001 <T	BDL	.001 <T	.001 <T
DEC	.004 <T	.001 <T	.001 <T	BDL	.	.	.001 <T	BDL
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)			
JAN	.155	.155	.185	.150	.	.	.170	.160
FEB	.175	.185	.195	.185	1.440	.195	.200	.185
MAR	.175	.170	.555	.165	.845	.170	.190	.170
APR	.160	.155	.155	.150	.995	.155	.150	.150
MAY	.165	.160	.150	.185	.345	.155	.165	.155
JUN	.315	.305	.540	.325	.315	.320	.	.
JUL	.100	.095	.440	.095	.	.	.105	.095
AUG	.135	.110	.520	.105	.	.	.	.
SEP	.090	.075	.140	.075	1.030	.090	.	.
OCT	.110	.100	.360	.105	.200	.110	.115	.105
NOV	.220	.150	.485	.145	.440	.155	.140	.145
DEC	.200	.195	.485	.230	.	.	.235	.195

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
TYPE	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020		GUIDELINE = N/A			
JAN	.360	.170	.180	.170	.	.	.170	.160
FEB	.220	.150	.160	.150	1.160	.140	.270	.150
MAR	.220	.160	.500	.180	.740	.170	.260	.170
APR	.280	.150	.150	.140	.860	.170	.280	.170
MAY	.290	.180	.170	.190	.260	.170	.310	.180
JUN	.290	.150	.300	.180	.150	.160	.	.
JUL	.230	.180	.270	.170	.	.	.360	.160
AUG	.230	.170	.330	.190	.	.	.	.
SEP	.240	.170	.270	.170	.800	.170	.	.
OCT	.260	.180	.260	.200	.220	.200	.250	.180
NOV	.350	.170	.480	.160	.390	.150	.200	.160
DEC	.250	.170	.340	.150	.	.	.310	.150
PH (DIMENSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)			
JAN	8.190	7.920	7.970	7.960	.	.	8.010	8.000
FEB	8.230	8.020	8.030	8.010	8.120	8.050	8.100	8.050
MAR	8.190	8.070	7.990	7.920	8.070	8.010	8.060	8.070
APR	8.330	8.280	8.270	8.270	8.180	8.190	8.280	8.270
MAY	8.220	8.210	8.200	8.200	8.180	8.210	8.210	8.200
JUN	8.160	8.100	8.100	8.120	8.080	8.180	.	.
JUL	8.210	7.930	7.940	7.930	.	.	7.920	7.970
AUG	8.270	8.250	8.220	8.240	.	.	.	.
SEP	8.370	8.300	8.270	8.260	8.270	8.300	.	.
OCT	8.290	8.160	8.150	8.150	8.180	8.120	8.180	8.190
NOV	8.110	8.130	8.090	8.100	8.200	8.140	8.210	8.250
DEC	8.250	8.210	8.040	8.140	.	.	8.070	8.080

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
SULPHATE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 500. (A3)			
JAN	25.460	32.970	32.710	32.910	.	.	32.670	33.290
FEB	22.390	29.540	30.420	31.640	29.280	29.050	28.500	29.080
MAR	23.820	28.870	28.740	28.610	28.620	28.720	28.380	28.590
APR	20.970	26.960	27.610	27.490	28.860	29.130	26.200	26.570
MAY	22.880	27.770	28.580	28.230	28.000	28.070	26.800	27.390
JUN	22.620	28.000	27.930	28.280	28.320	28.150	.	.
JUL	23.560	28.850	29.540	29.120	.	.	29.460	29.630
AUG	23.130	29.130	29.580	29.560	.	.	.	.
SEP	23.440	28.450	28.470	28.240	28.400	28.290	.	.
OCT	23.920	29.590	29.350	29.420	29.340	29.490	30.260	29.740
NOV	26.000	34.620	34.580	34.250	29.330	36.210	29.790	34.170
DEC	22.760	30.250	30.820	30.800	.	.	29.470	30.380
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)			
JAN	31.000	.720	.370	.270	.	.	.880	.600
FEB	5.600	.480	.440	.410	.520	.580	.960	.830
MAR	1.260	.200 <T	.960	.330	.420	.190 <T	.470	.200 <T
APR	7.100	.280	.320	.360	2.400	.450	.530	.380
MAY	3.700	.360	.600	.330	.850	.400	.380	.550
JUN	3.000	.330	.340	.220 <T	.890	.580	.	.
JUL	.720	.170 <T	.790	.200 <T	.	.	.400	.120 <T
AUG	1.230	.320	.590	.190	.	.	.	.
SEP	.760	.180	.130	.190	.330	.290	.	.
OCT	1.800	.350	.200 <T	.260	.230 <T	.360	.380	.240 <T
NOV	34.000	.370	.670	.130 <T	.330	.360	.450	.240 <T
DEC	14.400	.280	.170 <T	.390	.	.	.230	.160 <T

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
METALS								
SILVER (UG/L)				DET'N LIMIT = .020 GUIDELINE = 50. (A1)				
JAN	BDL	BDL	BDL	BDL	.	.	BDL	BDL
FEB	BDL	BDL	.030 <T	.030 <T	.060 <T	.030 <T	.110 <T	.090 <T
MAR	BDL	.030 <T	.040 <T	.030 <T	.060 <T	BDL	.030 <T	.030 <T
APR	.080 <T	.100 <T	.030 <T	.030 <T	.080 <T	BDL	BDL	.040 <T
MAY	.110 <T	.040 <T	.120 <T	.100 <T	.130 <T	.090 <T	.070 <T	.110 <T
JUN	BDL	BDL	BDL	BDL	.030 <T	BDL	.	.
JUL	BDL	BDL	.300 <T	BDL	.	.	BDL	BDL
AUG	BDL	BDL	.070 <T	BDL	.	.	.	.
SEP	BDL	BDL	.050 <T	BDL	.050 <T	.070 <T	.	.
OCT	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	.030 <T	BDL	BDL
DEC	BDL	BDL	BDL	BDL	.	.	BDL	BDL
ALUMINUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = 100.(A4)				
JAN	208.800	38.280	42.920	34.800	.	.	55.680	34.800
FEB	48.720	37.120	34.800	29.000	29.000	27.840	46.400	37.120
MAR	42.920	53.360	55.680	47.560	42.920	37.120	59.160	55.680
APR	64.960	46.400	45.240	37.120	139.200	30.160	52.200	45.240
MAY	104.400	109.040	103.240	89.320	162.400	109.040	127.600	127.600
JUN	54.000	130.000	110.000	110.000	70.000	85.000	.	.
JUL	26.000	300.000	220.000	240.000	.	.	260.000	280.000
AUG	25.000	250.000	190.000	210.000	.	.	.	.
SEP	14.000	240.000	200.000	220.000	140.000	150.000	.	.
OCT	28.000	100.000	110.000	99.000	76.000	74.000	99.000	94.000
NOV	170.000	51.000	54.000	47.000	39.000	39.000	57.000	50.000

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	130.000	42.000	44.000	36.000	.	.	45.000	38.000
ARSENIC (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 50.0 (A1)					
JAN	1.300	.370 <T	.320 <T	.420 <T	.	.	.590 <T	.370 <T
FEB	.830 <T	.320 <T	.120 <T	BDL	BDL	BDL	.080 <T	BDL
MAR	1.400	.660 <T	.880 <T	.930 <T	.870 <T	.830 <T	.700 <T	.590 <T
APR	1.300	.830 <T	.930 <T	.970 <T	1.200	.900 <T	.950 <T	1.000 <T
MAY	1.500	1.600	1.200	1.300	1.500	1.200	1.200	1.300
JUN	1.200	.710 <T	.700 <T	.840 <T	.470 <T	.430 <T	.	.
JUL	.440 <T	.390 <T	.430 <T	1.100	.	.	1.000 <T	1.100
AUG	1.300	.990 <T	.900 <T	.760 <T	.	.	.	.
SEP	1.200	.720 <T	.800 <T	.640 <T	.720 <T	.720 <T	.	.
OCT	.820 <T	.430 <T	.340 <T	.410 <T	.310 <T	.320 <T	.430 <T	.380 <T
NOV	.910 <T	.390 <T	.380 <T	.390 <T	.450 <T	.230 <T	.270 <T	.290 <T
DEC	.590 <T	BDL	.130 <T	.130 <T	.	.	.310 <T	.290 <T
BARIUM (UG/L)			DET'N LIMIT = 0.020 GUIDELINE = 1000. (A1)					
JAN	26.000	21.000	22.000	21.000	.	.	21.000	21.000
FEB	22.000	20.000	22.000	21.000	21.000	21.000	22.000	21.000
MAR	21.000	20.000	21.000	20.000	19.000	19.000	20.000	19.000
APR	22.000	20.000	22.000	21.000	21.000	21.000	21.000	21.000
MAY	20.000	21.000	21.000	21.000	20.000	20.000	21.000	20.000
JUN	20.000	21.000	21.000	22.000	22.000	22.000	.	.
JUL	23.000	22.000	23.000	22.000	.	.	23.000	23.000
AUG	22.000	22.000	23.000	23.000	.	.	.	.
SEP	22.000	21.000	21.000	21.000	21.000	21.000	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	21.000	20.000	22.000	21.000	20.000	21.000	20.000	20.000
NOV	24.000	21.000	22.000	21.000	21.000	21.000	21.000	21.000
DEC	22.000	20.000	22.000	20.000	.	.	20.000	21.000
BORON (UG/L)			DET'N LIMIT = 0.200 GUIDELINE = 5000. (A1)					
JAN	50.000	48.000	50.000	50.000	.	.	51.000	28.000
FEB	24.000	33.000	43.000	31.000	67.000	68.000	36.000	39.000
MAR	65.000	67.000	65.000	65.000	71.000	78.000	42.000	30.000
APR	220.000	80.000	210.000	200.000	170.000	200.000	190.000	210.000
MAY	22.000	62.000	72.000	56.000	75.000	51.000	25.000	44.000
JUN	35.000	36.000	33.000	35.000	30.000	26.000	.	.
JUL	42.000	40.000	43.000	36.000	.	.	41.000	30.000
AUG	50.000	52.000	49.000	49.000	.	.	.	.
SEP	54.000	26.000	53.000	53.000	57.000	46.000	.	.
OCT	29.000	24.000	28.000	33.000	30.000	32.000	28.000	24.000
NOV	38.000	23.000	32.000	37.000	37.000	36.000	24.000	35.000
DEC	18.000 <T	18.000 <T	32.000	30.000	.	.	30.000	30.000
BERYLLIUM (UG/L)			DET'N LIMIT = 0.010 GUIDELINE = N/A					
JAN	.100 <T	.060 <T	BDL	.070 <T	.	.	BDL	BDL
FEB	BDL	BDL	.070 <T	BDL	.080 <T	.180 <T	.110 <T	.050 <T
MAR	.200 <T	.190 <T	.100 <T	.110 <T	.240 <T	.130 <T	.070 <T	.050 <T
APR	.440 <T	.150 <T	.340 <T	.310 <T	.370 <T	.460 <T	.310 <T	.300 <T
MAY	.030 <T	.190 <T	.250 <T	.140 <T	.080 <T	.160 <T	.060 <T	.080 <T
JUN	.070 <T	.040 <T	.020 <T	.060 <T	.040 <T	.030 <T	.	.
JUL	.050 <T	.040 <T	.140 <T	.020 <T	.	.	.020 <T	.040 <T

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	.070 <T	.080 <T	.040 <T	.180 <T	.	.	.	.
SEP	.070 <T	.040 <T	.070 <T	.220 <T	.090 <T	.020 <T	.	.
OCT	BDL	BDL	.020 <T	BDL	.020 <T	.030 <T	BDL	BDL
NOV	.080 <T	BDL	.050 <T	.030 <T	.050 <T	.080 <T	.020 <T	.050 <T
DEC	BDL	BDL	BDL	BDL	.	.	BDL	BDL
CADMIUM (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 5.000 (A1)					
JAN	BDL	BDL	.160 <T	BDL	.	.	BDL	BDL
FEB	.290 <T	BDL	.060 <T	.130 <T	.130 <T	.090 <T	.390 <T	.200 <T
MAR	BDL	BDL	.140 <T	.070 <T	.160 <T	.090 <T	.110 <T	.080 <T
APR	.060 <T	BDL	.380 <T	BDL	.420 <T	BDL	.240 <T	.130 <T
MAY	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	BDL	.410 <T	.120 <T	.090 <T	.120 <T	.	.
JUL	.140 <T	.110 <T	1.100	BDL	.	.	.340 <T	BDL
AUG	BDL	BDL	.230 <T	BDL	.	.	.	.
SEP	BDL	BDL	.460 <T	BDL	.150 <T	BDL	.	.
OCT	BDL	BDL	.070 <T	BDL	.180 <T	BDL	BDL	BDL
NOV	BDL	BDL	.550	BDL	.120 <T	BDL	BDL	BDL
DEC	BDL	BDL	.120 <T	BDL	.	.	BDL	BDL
COBALT (UG/L)			DET'N LIMIT = 0.020 GUIDELINE = N/A					
JAN	.440 <T	.120 <T	.120 <T	.130 <T	.	.	.120 <T	.130 <T
FEB	3.400	3.200	.240 <T	.180 <T	.310 <T	.210 <T	.260 <T	.200 <T
MAR	2.100	.190 <T	.200 <T	.160 <T	.360 <T	.180 <T	.200 <T	.190 <T
APR	2.600	1.800	.130 <T	.120 <T	.210 <T	.090 <T	.100 <T	.100 <T
MAY	2.400	2.400	.210 <T	.180 <T	.380 <T	.150 <T	.130 <T	.090 <T

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	.140 <T	.120 <T	.110 <T	.110 <T	.030 <T	.060 <T	.	.
JUL	.290 <T	.200 <T	1.200	.230 <T	.	.	.190 <T	.230 <T
AUG	.080 <T	2.100	.590 <T	.050 <T	.	.	.	.
SEP	.050 <T	.080 <T	.060 <T	BDL	1.100	.060 <T	.	.
OCT	.140 <T	.130 <T	.320 <T	.150 <T	.180 <T	.140 <T	.170 <T	.120 <T
NOV	1.800	1.900	.100 <T	.080 <T	.170 <T	.120 <T	.040 <T	.080 <T
DEC	.400 <T	.080 <T	.230 <T	.100 <T	.	.	.110 <T	.170 <T
CHROMIUM (UG/L)			DET'N LIMIT = 0.100 GUIDELINE = 50. (A1)					
JAN	6.200	5.800	5.900	5.800	.	.	5.700	1.400
FEB	.540 <T	2.400	4.300	2.500	14.000	9.300	2.700	4.100
MAR	6.300	6.400	6.900	7.000	7.300	7.600	2.800	1.000 <T
APR	8.100	2.700	8.000	7.300	7.600	7.600	7.100	7.700
MAY	BDL	6.500	7.900	5.800	8.200	4.900	.940 <T	3.500
JUN	3.500	3.700	3.500	3.200	1.800	1.100	.	.
JUL	5.700	5.000	6.700	3.700	.	.	4.300	2.500
AUG	5.100	5.500	5.000	4.900	.	.	.	.
SEP	4.500	.800 <T	4.400	4.300	5.900	3.500	.	.
OCT	3.200	1.200	2.800	3.900	3.400	3.600	.980 <T	.940 <T
NOV	4.200	.210 <T	2.400	3.100	3.200	3.100	.730 <T	2.800
DEC	BDL	BDL	4.000 <T	3.000 <T	.	.	3.400 <T	3.300 <T
COPPER (UG/L)			DET'N LIMIT = .100 GUIDELINE = 1000 (A3)					
JAN	1.900	1.200	31.000	1.700	.	.	14.000	1.600
FEB	1.500	1.500	18.000	2.100	37.000	6.400	14.000	2.300
MAR	1.200	1.100	24.000	1.700	42.000	5.200	7.500	1.600

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
APR	1.900	1.200	110.000	2.100	130.000	6.000	9.300	2.300
MAY	2.000	1.200	16.000	2.000	29.000	5.200	6.900	2.200
JUN	1.300	1.300	22.000	2.200	70.000	7.400	.	.
JUL	1.400	1.100	15.000	1.700	.	.	4.700	1.600
AUG	1.200	.950 <T	12.000	1.600	.	.	.	.
SEP	1.400	1.100	15.000	1.700	32.000	6.000	.	.
OCT	1.100	.750 <T	14.000	1.300	30.000	4.900	3.900	1.200
NOV	2.000	1.100	27.000	2.100	43.000	6.300	9.500	1.600
DEC	1.600 <T	.920 <T	42.000	2.100 <T	.	.	12.000	1.700 <T
IRON (UG/L)			DET'N LIMIT = 4.000 GUIDELINE = 300. (A3)					
JAN	420.000	BDL	BDL	BDL	.	.	BDL	BDL
FEB	75.000	BDL	BDL	BDL	52.000	47.000 <T	7.700 <T	BDL
MAR	27.000 <T	BDL	8.400 <T	6.900 <T	44.000 <T	29.000 <T	8.400 <T	10.000 <T
APR	100.000	7.500 <T	BDL	BDL	370.000	23.000 <T	5.100 <T	BDL
MAY	170.000	13.000 <T	16.000 <T	12.000 <T	280.000	78.000	17.000 <T	15.000 <T
JUN	55.000	BDL	5.100 <T	BDL	43.000 <T	31.000 <T	.	.
JUL	19.000 <T	BDL	BDL	BDL	.	.	5.300 <T	BDL
AUG	22.000 <T	BDL	BDL	BDL	.	.	.	.
SEP	15.000 <T	BDL	BDL	BDL	36.000 <T	32.000 <T	.	.
OCT	48.000 <T	BDL	5.900 <T	BDL	51.000	45.000 <T	BDL	BDL
NOV	320.000	BDL	BDL	BDL	60.000	57.000	5.300 <T	BDL
DEC	250.000	BDL	BDL	BDL	.	.	BDL	BDL
MERCURY (UG/L)			DET'N LIMIT = 0.010 GUIDELINE = 1.000 (A1)					
JAN	.020 <T	.030 <T	.	BDL	.	.	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.030 <T	.030 <T	.	BDL	.	.050 <T	.	BDL
MAR	.030 <T	.030 <T	.	BDL	.	.060	.	BDL
APR	.030 <T	.030 <T	.070	BDL	.	ISM	.	BDL
MAY	.040 <T	.040 <T	.	BDL	.	.070	.	.020 <T
JUN	.040 <T	.050 <T	.	BDL	.	.070	.	.
JUL	.060	.050 <T	.	.050 <T	.	.	.	BDL
AUG	.050 <T	.050 <T	.	BDL	.	.	.	.
SEP	.080	.060	.	BDL	.	.100	.	.
OCT	.080	.070	.	.030 <T	.	.090	.	BDL
NOV	.030 <T	.050 <T	.	BDL	.	.100	.	BDL
DEC	.070	.070	.	.020 <T	.	.	.	.020 <T
MANGANESE (UG/L)			DET'N LIMIT = .050 GUIDELINE = 50.0 (A3)					
JAN	31.000	1.000	.840	.960	.	.	1.100	.770
FEB	6.600	3.200	1.100	.840	3.000	2.700	1.200	.590
MAR	2.900	.490 <T	.510	.380 <T	1.900	1.400	.570	.350 <T
APR	10.000	2.200	.860	.680	6.900	1.400	.600	.450 <T
MAY	10.000	2.800	1.100	.880	5.600	2.800	.710	.790
JUN	4.600	.720	1.200	.700	2.400	2.500	.	.
JUL	1.600	.770	1.800	.660	.	.	.830	.580
AUG	2.700	2.300	.570	.410 <T	.	.	.	.
SEP	2.100	.780	.670	.530	3.900	2.500	.	.
OCT	4.100	.690	1.200	.750	3.500	3.300	.770	.580
NOV	31.000	.670	.710	.670	3.100	2.900	.560	.490 <T
DEC	14.000	.640	.700	.550	.	.	.410 <T	.500 <T
MOLYBDENUM (UG/L)			DET'N LIMIT = 0.020 GUIDELINE = N/A					

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	.860	1.300	1.200	1.200	.	.	1.200	1.200
FEB	1.300	1.500	1.500	1.500	1.400	1.300	1.400	1.400
MAR	1.400	1.300	1.300	1.400	1.300	1.300	1.300	1.200
APR	1.200	1.400	1.500	1.400	1.300	1.300	1.500	1.300
MAY	1.300	1.300	1.300	1.400	1.600	1.300	1.600	1.400
JUN	1.500	1.600	1.500	1.500	1.600	1.500	.	.
JUL	1.500	1.700	1.600	1.600	.	.	1.600	1.700
AUG	1.300	1.400	1.500	1.500	.	.	.	.
SEP	1.400	1.600	1.600	1.700	1.600	1.400	.	.
OCT	1.000	1.100	1.200	1.200	1.100	1.200	1.100	1.300
NOV	.660	1.200	1.300	1.300	1.100	1.200	1.200	1.300
DEC	.910	1.100	1.100	1.100	.	.	1.100	1.200
NICKEL (UG/L)			DET'N LIMIT = 0.100 GUIDELINE = 50. (F3)					
JAN	1.500 <T	.770 <T	11.000	.980 <T	.	.	.920 <T	1.000 <T
FEB	.800 <T	1.500 <T	14.000	1.100 <T	120.000	1.900 <T	1.700 <T	1.300 <T
MAR	1.300 <T	1.000 <T	14.000	1.900 <T	110.000	1.300 <T	4.700	1.700 <T
APR	1.500 <T	.710 <T	4.600	1.000 <T	41.000	.860 <T	.920 <T	1.300 <T
MAY	1.400 <T	1.000 <T	60.000	1.600 <T	160.000	1.300 <T	1.400 <T	1.100 <T
JUN	1.100 <T	BDL	36.000	BDL	.470 <T	BDL	.	.
JUL	.850 <T	.800 <T	1200.000	1.700 <T	.	.	3.600	2.200
AUG	1.200 <T	.920 <T	690.000 RRV	.690 <T	.	.	.	.
SEP	1.500 <T	1.400 <T	5.800	.870 <T	440.000	.790 <T	.	.
OCT	1.000 <T	1.100 <T	150.000	1.400 <T	13.000	1.100 <T	3.400	.870 <T
NOV	1.100 <T	.250 <T	7.200	.540 <T	22.000	.840 <T	2.900	.720 <T
DEC	2.000 <T	1.200 <T	59.000	.940 <T	.	.	2.900	1.700 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
LEAD (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 50. (A1)					
JAN	1.100	.070 <T	13.000	.210	.	.	.980	.140 <T
FEB	.800	.270	3.500	1.100	1.300	.230	1.300	BDL
MAR	.160 <T	.080 <T	3.800	.270	.810	.170 <T	.480	.170 <T
APR	.560	.080 <T	19.000	.390	10.000	.340	.640	.240
MAY	.630	.170 <T	3.100	.640	1.500	.280	.630	.160 <T
JUN	.300	BDL	11.000	.690	1.900	.380	.	.
JUL	.080 <T	.080 <T	22.000	1.100	.	.	.870	.080 <T
AUG	.250	.030 <T	9.900	.790	.	.	.	.
SEP	.270	BDL	13.000	.980	1.600	.610	.	.
OCT	.270	.120 <T	10.000	.400	1.400	.300	.330	.100 <T
NOV	1.300	.070 <T	44.000	.870	.720	.140 <T	.470	.050 <T
DEC	.480 <T	BDL	26.000	.400 <T	.	.	.550	.060 <T
ANTIMONY (UG/L)			DET'N LIMIT = .050 GUIDELINE = 146. (D4)					
JAN	.310	.530	.500	.500	.	.	.520	.460
FEB	5.100	5.500	.740	.780	.680	.690	.640	.630
MAR	4.400	.850	.700	.710	.760	.740	.780	.640
APR	3.600	3.700	.520	.720	.630	.590	.650	.700
MAY	5.500	6.200	1.000	.900	.990	.940	1.100	.970
JUN	.900	.760	.870	.810	.360	.340	.	.
JUL	.930	.910	.990	1.000	.	.	.930	1.000
AUG	.860	5.600	.880	.850	.	.	.	.
SEP	.800	.740	.860	.850	.990	.780	.	.
OCT	.560	.650	.810	.660	.720	.630	.740	.540
NOV	3.200	7.800	.650	.500	.610	.810	.490	.580
DEC	.380 <T	.460 <T	.790	.590	.	.	.670	.630

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
TYPE	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
SODIUM (UG/L)			DET'N LIMIT = 0.200 GUIDELINE = 10. (A1)					
JAN	BDL	1.100 <T	.770 <T	.820 <T	.	.	1.300 <T	.480 <T
FEB	2.400 <T	3.000 <T	2.100 <T	1.700 <T	4.800 <T	3.200 <T	3.900 <T	2.600 <T
MAR	.760 <T	3.400 <T	3.600 <T	2.600 <T	1.700 <T	2.800 <T	4.500 <T	3.700 <T
APR	5.000 <T	5.700 <T	6.100 <T	3.800 <T	3.400 <T	2.800 <T	2.700 <T	1.900 <T
MAY	.400 <T	3.000 <T	5.600 <T	4.600 <T	3.200 <T	7.600 <T	5.000 <T	8.700 <T
JUN	1.400 <T	2.200 <T	4.100 <T	3.400 <T	2.500 <T	2.500 <T	.	.
JUL	BDL	2.000 <T	2.400 <T	4.400 <T	.	.	2.700 <T	2.900 <T
AUG	BDL	3.800 <T	5.000 <T	3.900 <T	.	.	.	.
SEP	BDL	4.400 <T	2.900 <T	2.700 <T	2.400 <T	4.300 <T	.	.
OCT	BDL	BDL	BDL	BDL	BDL	1.400 <T	BDL	BDL
NOV	BDL	1.900 <T	1.300 <T	2.100 <T	1.400 <T	2.100 <T	1.800 <T	1.700 <T
DEC	BDL	BDL	1.100 <T	BDL	.	.	2.500 <T	1.100 <T
STRONTIUM (UG/L)			DET'N LIMIT = .050 GUIDELINE = N/A					
JAN	160.000	150.000	150.000	150.000	.	.	150.000	150.000
FEB	170.000	180.000	190.000	180.000	180.000	180.000	170.000	180.000
MAR	160.000	150.000	160.000	160.000	150.000	150.000	160.000	150.000
APR	160.000	160.000	160.000	170.000	150.000	160.000	170.000	160.000
MAY	160.000	170.000	170.000	170.000	180.000	170.000	180.000	160.000
JUN	160.000	160.000	160.000	160.000	170.000	170.000	.	.
JUL	170.000	180.000	180.000	180.000	.	.	180.000	180.000
AUG	170.000	170.000	170.000	170.000	.	.	.	.
SEP	170.000	160.000	160.000	170.000	170.000	170.000	.	.
OCT	150.000	150.000	150.000	160.000	150.000	160.000	150.000	150.000
NOV	160.000	170.000	170.000	170.000	170.000	160.000	170.000	170.000
DEC	160.000	160.000	160.000	160.000	.	.	160.000	160.000

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
TYPE			STANDING	FLOW	STANDING	FLOW	STANDING	FLOW
ANTIMONY (UG/L)			DET'N LIMIT = .050 GUIDELINE = N/A					
JAN	6.800	1.700 <T	1.500 <T	1.400 <T	.	.	1.300 <T	1.300 <T
FEB	4.900	3.100	2.800	3.200	3.300	3.300	3.100	3.100
MAR	3.800	2.900	3.300	2.700	2.600	2.700	2.700	2.900
APR	8.100	6.200	6.100	5.400	5.500	5.600	5.400	5.500
MAY	4.200	2.200	2.800	2.300	3.100	2.800	2.400	2.700
JUN	7.400	3.300	3.500	3.400	3.700	3.900	.	.
JUL	3.500	3.000	4.400	4.700	.	.	4.800	4.600
AUG	4.000	3.400	4.200	4.900	.	.	.	.
SEP	8.500	8.700	9.600	10.000	8.400	5.600	.	.
OCT	2.800	1.900 <T	3.900	3.900	1.900 <T	1.900 <T	3.200	3.300
NOV	5.600	2.200	3.500	3.100	2.300	2.600	3.100	3.400
DEC	5.700	2.300 <T	3.100 <T	2.900 <T	.	.	3.100 <T	3.000 <T
THALLIUM (UG/L)			DET'N LIMIT = .010 GUIDELINE = 13. (D4)					
JAN	.030 <T	BDL	BDL	.020 <T	.	.	BDL	BDL
FEB	.110 <T	.100 <T	.090 <T	.030 <T	.100 <T	.050 <T	BDL	.080 <T
MAR	BDL	.040 <T	BDL	.040 <T	BDL	BDL	BDL	.040 <T
APR	.030 <T	.040 <T	.020 <T	BDL	.030 <T	BDL	BDL	BDL
MAY	BDL	BDL	.040 <T	BDL	BDL	BDL	BDL	BDL
JUN	.040 <T	BDL	.030 <T	.050 <T	BDL	.060 <T	.	.
JUL	BDL	BDL	.050 <T	.090 <T	.	.	.050 <T	.120 <T
AUG	.030 <T	.030 <T	BDL	BDL	.	.	.	.
SEP	.040 <T	.070 <T	.080 <T	.070 <T	.050 <T	.070 <T	.	.
OCT	.030 <T	.030 <T	.030 <T	.030 <T	.030 <T	.030 <T	.030 <T	BDL
NOV	.020 <T	.020 <T	.040 <T	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	BDL	.	.	BDL	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT SITE 1 STANDING	SITE 1 FLOWING	DISTRIBUTION SYSTEM SITE 2 STANDING	SITE 2 FLOWING	SITE 3 STANDING	SITE 3 FLOWING
ARSENIC (UG/L)			DET'N LIMIT = .010 GUIDELINE = 100.(01)					
JAN	.390	.370	.220	.210	.	.	.260	.220
FEB	.640	.510	.530	.550	.690	.640	.870	.720
MAR	.420	.380	.430	.380	.320	.330	.340	.380
APR	.480	.420	.370	.470	.410	.490	.490	.550
MAY	.530	.570	.550	.540	.520	.470	.490	.460
JUN	.470	.430	.350	.410	.410	.400	.	.
JUL	.740	.580	.480	.580	.	.	.500	.530
AUG	.630	.510	.480	.470	.	.	.	.
SEP	.570	.370	.510	.500	.480	.430	.	.
OCT	.330	.180 <T	.200 <T	.220	.190 <T	.170 <T	.200 <T	.210
NOV	.390	.190 <T	.200 <T	.170 <T	.160 <T	.170 <T	.190 <T	.220
DEC	.300 <T	.210 <T	.230 <T	.200 <T	.	.	.220 <T	.240 <T
VANADIUM (UG/L)			DET'N LIMIT = .050 GUIDELINE = N/A					
JAN	.740	.700	.660	.660	.	.	.670	.590
FEB	.330 <T	.550	.540	.510	.390 <T	.400 <T	.610	.530
MAR	.300 <T	.600	.670	.570	.450 <T	.410 <T	.610	.540
APR	.320 <T	.620	.640	.640	1.700	.410 <T	.670	.610
MAY	.430 <T	.620	.690	.600	1.300	.700	.670	.680
JUN	.350 <T	.570	.590	.560	.500 <T	.450 <T	.	.
JUL	.270 <T	.700	.720	.710	.	.	.720	.710
AUG	.250 <T	.710	.590	.710	.	.	.	.
SEP	.260 <T	.620	.650	.560	.570	.500 <T	.	.
OCT	.220 <T	.540	.540	.500 <T	.400 <T	.380 <T	.480 <T	.500 <T
NOV	.530	.430 <T	.450 <T	.430 <T	.330 <T	.270 <T	.460 <T	.480 <T
DEC	.470 <T	.400 <T	.510	.390 <T	.	.	.470 <T	.470 <T

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT	DISTRIBUTION SYSTEM				
			SITE 1	SITE 2		SITE 3		
(T = T.C./L)				(T = TOT GUIDELINE = 5000. . .)				
JAN	4.500	1.700	25.000	1.600	-	-	13.000	1.800
FEB	2.100	1. 0	24.000	2.200	62.000	4.100	7.900	2.100
MAR	.910 <T	.770 <T	34.000	1.800	74.000	2.900	4.800	1.300
APR	4.600	2.400	110.000	3.400	54.000	4.200	9.600	3.100
MAY	3.900	2.200	19.000	2.600	74.000	4.100	6.100	3.200
JUN	2.800	2.000	46.000	2.800	22.000	5.600	-	-
JUL	2.000	1.600	34.000	2.400	-	-	7.600	2.400
AUG	1.600	1.300	28.000	2.200	-	-	-	-
SEP	1.700	2.100	20.000	3.200	91.000	3.300	-	-
OCT	.940 <T	.770 <T	25.000	1.300	24.000	2.700	8.500	1.200
NOV	5.100	1.800	41.000	2.200	35.000	5.000	18.000	2.000
DEC	2.300	.930 <T	60.000	1.900 <T	-	-	20.000	1.400 <T

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

WATER TREATMENT PLANT — DISTRIBUTION SYSTEM

SITE	RAW	TREATED	SITE 1		SITE 2		SITE 3		
TYPE							GRAB		FLOW
	GRAB	FLOW							
BENZENE (UG/L)	DET'N LIMIT = .050 GUIDELINE = 5.0 (81)								
JAN	BDL	BDL	.	BDL	.	.	.	BDL	
FEB	BDL	BDL	.	BDL	.	BDL	.	BDL	
MAR	BDL	BDL	.	BDL	.	BDL	.	BDL	
APR	BDL	BDL	.	BDL	.	BDL	.	BDL	
MAY	BDL	BDL	.	BDL	.	BDL	.	.	
JUN	BDL	BDL	.	BDL	.	.	.	BDL	
JUL	BDL	BDL	.	BDL	.	.	.	.	
AUG	.050 <T	.050 <T	.	.050 <T	.	BDL	.	.	
SEP	BDL	.	.	BDL	.	BDL	.	BDL	
OCT	BDL	BDL	.	BDL	.	IU	.	BDL	
NOV	BDL	IU	.	BDL	.	.	.	BDL	
DEC	BDL	BDL	.						
TOLUENE (UG/L)	DET'N LIMIT = .050 GUIDELINE = 24.0 (84)								
JAN	.100 <T	BDL	.	BDL	.	.	.	BDL	
FEB	BDL	BDL	.	.050 <T	.	.050 <T	.	.050 <T	
MAR	.050 <T	BDL	.	BDL	.	BDL	.	BDL	
APR	BDL	BDL	.	BDL	.	.050 <T	.	BDL	
MAY	.050 <T	BDL	.	.050 <T	.	BDL	.	.	
JUN	BDL	.050 <T	.	.050 <T	.	.050 <T	.	BDL	
JUL	BDL	.100 <T	.	BDL	.	.	.	.	
AUG	.100 <T	.150 <T	.	.100 <T	.	.	.	.	
SEP	BDL	.	.	BDL	.	BDL	.	.050 <T	
OCT	BDL	BDL	.	BDL	.	BDL	.	BDL	
NOV	BDL	IU	.	BDL	.	IU	.		

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DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)			
JAN	1.600	2.000	.	.	.	.	.	.
FEB	1.200	.800	.	.	.	.	.	.
MAR	1.200	1.000	.	.	.	.	.	.
APR	1.000	1.200	.	.	.	.	.	.
MAY	1.400	.800 <T	.	.	.	.	.	.
JUN	1.000 <T	1.200	.	.	.	.	.	.
JUL	10.000	11.200	.	.	.	.	.	.
AUG	1.600	1.200	.	.	.	.	.	.
SEP	.800 <T	1.000 <T	.	.	.	.	.	.
OCT	1.600	1.600	.	.	.	.	.	.
NOV	.600 <T	1.200	.	.	.	.	.	.
DEC	BDL	.400 <T	.	.	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES								
BENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 5.0 (81)			
JAN	BDL	BDL	.	BDL	.	.	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL	.	.
JUL	BDL	BDL	.	BDL	.	.	.	BDL
AUG	.050 <T	.050 <T	.	.050 <T	.	.	.	.
SEP	BDL	.	.	BDL	.	BDL	.	.
OCT	BDL	BDL	.	BDL	.	BDL	.	BDL
NOV	BDL	IU	.	BDL	.	IU	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
TOLUENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 24.0 (84)			
JAN	.100 <T	BDL	.	BDL	.	.	.	BDL
FEB	BDL	BDL	.	.050 <T	.	.050 <T	.	.050 <T
MAR	.050 <T	BDL	.	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.050 <T	.	BDL
MAY	.050 <T	BDL	.	.050 <T	.	BDL	.	BDL
JUN	BDL	.050 <T	.	.050 <T	.	.050 <T	.	.
JUL	BDL	.100 <T	.	BDL	.	.	.	BDL
AUG	.100 <T	.150 <T	.	.100 <T	.	.	.	.
SEP	BDL	.	.	BDL	.	BDL	.	.
OCT	BDL	BDL	.	BDL	.	BDL	.	.050 <T
NOV	BDL	IU	.	BDL	.	IU	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE		WATER TREATMENT PLANT				DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	BDL	BDL	.	.050 <T	.	.	.	BDL
ETHYLBENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2.4 (84)			
JAN	.100 <T	BDL	.	.050 <T	.	.	.	.050 <T
FEB	BDL	BDL	.	.050 <T	.	.050 <T	.	.050 <T
MAR	.050 <T	BDL	.	BDL	.	.050 <T	.	.050 <T
APR	.050 <T	BDL	.	.050 <T	.	.100 <T	.	BDL
MAY	.050 <T	BDL	.	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	.050 <T	.	.
JUL	BDL	BDL	.	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.	.	.
SEP	BDL	.	.	BDL	.	BDL	.	.
OCT	BDL	BDL	.	BDL	.	BDL	.	BDL
NOV	BDL	IU	.	BDL	.	IU	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
O-XYLENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 300 (84)			
JAN	BDL	BDL	.	BDL	.	.	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	.050 <T	.	.
JUN	BDL	BDL	.	.050 <T	.	.	.	BDL
JUL	BDL	BDL	.	BDL	.	.	.	.
AUG	BDL	BDL	.	.050 <T	.	BDL	.	.
SEP	BDL	.	.	BDL	.		.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW
OCT	BDL	BDL	.	BDL	.	BDL	.	BDL
NOV	BDL	IU	.	BDL	.	IU	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
STYRENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 46.5 (D2)			
JAN	.700	BDL	.	.150 <T	.	.	.	.200 <T
FEB	.100 <T	.150 <T	.	.300 <T	.	.350 <T	.	.250 <T
MAR	.450 <T	.100 <T	.	.100 <T	.	.150 <T	.	.150 <T
APR	.300 <T	.200 <T	.	.250 <T	.	.400 <T	.	BDL
MAY	.250 <T	.100 <T	.	.150 <T	.	.200 <T	.	.100 <T
JUN	.100 <T	.100 <T	.	.150 <T	.	BDL	.	.
JUL	BDL	.100 <T	.	.100 <T	.	.	.	.250 <T
AUG	BDL	.050 <T	.	BDL	.	.	.	.
SEP	.150 <T	.	.	BDL	.	BDL	.	.
OCT	.100 <T	.050 <T	.	.050 <T	.	.050 <T	.	.150 <T
NOV	.050 <T	IU	.	BDL	.	IU	.	BDL
DEC	BDL	BDL	.	.050 <T	.	.	.	.150 <T
CHLOROFORM (UG/L)			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)			
JAN	.300 <T	7.300	.	10.800	.	.	.	10.500
FEB	BDL	10.100	.	9.600	.	7.900	.	10.600
MAR	BDL	11.500	.	12.000	.	10.000	.	12.600
APR	.200 <T	11.500	.	10.500	.	10.700	.	12.000
MAY	BDL	14.000	.	12.700	.	13.100	.	17.400
JUN	BDL	17.700	.	22.500	.	19.700	.	.
JUL	BDL	15.700	.	16.700	.	.	.	15.400

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW
AUG	.700 <T	15.800	.	14.500	.	.	.	.
SEP	BDL	.	.	17.200	.	14.500	.	.
OCT	BDL	12.600	.	13.200	.	9.700	.	11.000
NOV	BDL	IU	.	14.500	.	IU	.	12.800
DEC	BDL	14.400	.	12.300	.	.	.	10.300
111, TRICHLOROETHANE (UG/L)			DET'N LIMIT = .020		GUIDELINE = 200 (D1)			
JAN	BDL	BDL	.	BDL	.	.	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL	.	BDL
MAR	.020 <T	BDL	.	BDL	.	BDL	.	.020 <T
APR	BDL	BDL	.	BDL	.	BDL	.	BDL
MAY	.020 <T	BDL	.	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL	.	.
JUL	BDL	BDL	.	BDL	.	.	.	BDL
AUG	BDL	.040 <T	.	BDL	.	.	.	.
SEP	BDL	.	.	BDL	.	BDL	.	.
OCT	BDL	BDL	.	BDL	.	BDL	.	BDL
NOV	BDL	IU	.	BDL	.	IU	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
DICHLOROBROMOMETHANE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 350 (A1+)			
JAN	BDL	6.950	.	9.400	.	.	.	8.750
FEB	BDL	9.400	.	8.900	.	7.200	.	9.200
MAR	BDL	9.600	.	9.650	.	8.700	.	9.750
APR	BDL	9.000	.	8.200	.	8.200	.	9.450
MAY	BDL	9.100	.	7.900	.	8.000	.	10.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT SITE 1 STANDING	WATER TREATMENT PLANT SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW
JUN	BDL	11.150	.	12.550	.	11.400	.	.
JUL	BDL	10.300	.	9.750	.	.	.	9.600
AUG	.150 <T	9.950	.	9.500	.	.	.	.
SEP	BDL	.	.	10.450	.	9.500	.	.
OCT	BDL	9.250	.	9.050	.	7.500	.	8.500
NOV	BDL	IU	.	9.850	.	IU	.	8.700
DEC	BDL	9.900	.	9.100	.	.	.	8.050
CHLORODIBROMOMETHANE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)			
JAN	BDL	2.900	.	3.800	.	.	.	3.700
FEB	BDL	4.400	.	4.200	.	4.300	.	4.100
MAR	BDL	4.800	.	4.600	.	4.700	.	4.600
APR	BDL	4.100	.	3.900	.	4.000	.	4.300
MAY	BDL	4.400	.	3.300	.	3.700	.	4.600
JUN	BDL	4.700	.	5.200	.	4.800	.	.
JUL	BDL	5.800	.	5.200	.	.	.	5.400
AUG	BDL	5.600	.	4.800	.	.	.	.
SEP	BDL	.	.	5.200	.	4.700	.	.
OCT	BDL	5.000	.	4.700	.	4.400	.	5.000
NOV	BDL	IU	.	4.300	.	IU	.	3.600
DEC	BDL	4.600	.	3.400	.	.	.	3.500
T-CHLOROETHYLENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)			
JAN	BDL	BDL	.	BDL	.	.	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE		WATER TREATMENT PLANT			DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
APR	BDL	BDL	.	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL	.	BDL
JUN	BDL	.050 <T	.	.050 <T	.	BDL	.	.
JUL	BDL	BDL	.	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.	.	.
SEP	BDL	.	.	BDL	.	BDL	.	.
OCT	BDL	BDL	.	BDL	.	BDL	.	BDL
NOV	BDL	IU	.	BDL	.	IU	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
BROMOFORM (UG/L)			DET'N LIMIT = .200		GUIDELINE = 350 (A1+)			
JAN	BDL	.400 <T	.	.400 <T	.	.	.	.400 <T
FEB	BDL	.600 <T	.	.600 <T	.	.400 <T	.	.400 <T
MAR	BDL	.600 <T	.	.600 <T	.	.600 <T	.	.600 <T
APR	BDL	.400 <T	.	.400 <T	.	.600 <T	.	.600 <T
MAY	BDL	.400 <T	.	.400 <T	.	.400 <T	.	.400 <T
JUN	BDL	.600 <T	.	.600 <T	.	.600 <T	.	.
JUL	BDL	.600 <T	.	.800 <T	.	.	.	1.000 <T
AUG	BDL	.800 <T	.	.800 <T	.	.	.	.
SEP	BDL	.	.	.800 <T	.	.600 <T	.	.
OCT	BDL	.800 <T	.	.600 <T	.	.600 <T	.	.800 <T
NOV	BDL	IU	.	.400 <T	.	IU	.	.400 <T
DEC	BDL	.600 <T	.	1.000 <T	.	.	.	.400 <T
TOTL TRIHALOMETHANES (UG/L)			DET'N LIMIT = .500		GUIDELINE = 350 (A1)			
JAN	BDL	17.550	.	24.400	.	.	.	23.350

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NIAGARA FALLS WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	BDL	24.500	.	23.300	.	19.800	.	24.300
MAR	BDL	26.500	.	26.850	.	24.000	.	27.550
APR	BDL	25.000	.	23.000	.	23.500	.	26.350
MAY	BDL	27.900	.	24.300	.	25.200	.	32.700
JUN	BDL	34.150	.	40.850	.	36.500	.	.
JUL	BDL	32.400	.	32.450	.	.	.	31.400
AUG	.850 <T	32.150	.	29.600	.	.	.	.
SEP	BDL	.	.	33.650	.	29.300	.	.
OCT	BDL	27.650	.	27.550	.	22.200	.	25.300
NOV	BDL	IU	.	29.050	.	IU	.	25.500
DEC	BDL	29.500	.	25.800	.	.	.	22.150

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0 (A1)
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML (A1)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL (A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	2000. (B4)
PENTACHLOROPHENOL	NG/L	50.	30000. (B4)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5 (A4)
FIELD TEMPERATURE	^{o}C	N/A	<15 ^{o}C (A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500 (A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20 (A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100 (A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DIMENSLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
SULPHATE	MG/L	.200	500. (A3)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	10. (F3)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	900000. (B1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR EPOXIDE	NG/L	1.0	3000.	(A1)
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	200000.	(B4)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	120000.	(B1)
PICLORAM	NG/L	100.	190000.	(B3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	20000.	(B1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION(AZINPHOSMETHYL)	NG/L	N/A	20000.	(B1)
MALATHION	NG/L	20.	190000.	(B1)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(A1)
METHYLTRITHION	NG/L	20.	N/A	

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PARATHION	NG/L	20.	50000. (B1)
PHORATE (THIMET)	NG/L	20.	2000. (B3)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENONYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	90000. (B1)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	90000. (B1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	.05 G)
METHYLENE CHLORIDE	UG/L	.500	50. (B1)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	70. (D5)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (B1)
1,2-DICHLOROPROPANE	UG/L	.050	6.0 (D5)
TRICHLOROETHYLENE	UG/L	.100	50. (B1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	60. (D5)
1,4-DICHLOROBENZENE	UG/L	.100	1.0 (B4)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	3.0 (B4)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	140. (D5)